REV	DESCRIPTION	DATE	APPR	
A ADDED BNPF @ 5		12-11-74		
B ADJUSTED PROGRAM	A TIMING	2-13->5	Math	
				•
		•		
		•		
		•		
	THIS DOCUMENT CONTAINS PROPRIETARY INFOR-	· · · · ·		
	THIS DOCUMENT CONTAINS PROPRIETARY INFOR- MATION BELONGING TO PRO-LOG CORPORATION, AND SUCH INFORMATION MAY NOT BE DISCLOSED TO OTHERS, REPRODUCED, COPIED OR USED MITHOUT WRITTEN AUTHORITY FROM AN OFFICER PM 9001 7	(IES 9	10	
	M. Brews 11-4-74			
PRO-LOG		REV	CUT I	
CORPORATION	A 100793	B	SHT /	

USE WITH CONTROL PROGRAM 100789

PRO-LOG CORPORATION

A

100793

REV

SHT Z OF

HF						PROGRAM ASSEMBLY FORM						
PAGE	LINE			MNEMONIC	NSTRUCTION	TITLE						
ADR	ADR	INSTR	LABEL	OPERATION	OPERAND	COMMENTS						
8	0 0	20	(FIN-1st-LAST)	FIM	PO	T Move first and last address to RAM						
	1	20			8 A-A LOC	[RO] = 2 ; [KI] = 0						
	2	38		FIN	P4	[287 = 7 [R9] = C						
	03	61	DO-1st-LAST	INC	1							
-	4	32		FIN	P1	[R2] = 0 [R3] = C						
	5	29		SRC	P4							
	6	А3		LD	3							
	7	EO		WRM								
	8	79		ISZ	9							
	9	03			DO-1st-LAST	V						
	Α	СО		BBL	0							
	0 B	38	(FIN 5 PAIR)	FIN	P4	† Fetch N pairs for subroutines						
	С	61		INC	1							
	D	3A		FIN	P5							
	Ε	61		INC	1	•						
	0 F	34	(FIN 3 PAIR)	FIN	P2							
	10	61		INC	1							
	11	3C	(FIN 2 PAIR)	FIN	P6							
	2	61		INC	1							
	3	32		FIN	P1							
	4	CO		BBL	0							
	15	3C	(FIN 2 TTY)	FIN	P6	T Fetch 2 pairs, TTY and PT						
	6	61		INC	1							
	7	3A		FIN	P5	V						
	8	CO		BBL	0							
	19	20	(FIN ADR)	FIM	PO	† Fetch 2 pairs for addressing						
* .	Α	4C			8 ADR ROM							
	В	48		JUN								
	С	11			(FIN 2 PAIR)							
	D				\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \							
	E											
						· · · · · · · · · · · · · · · · · · ·						

HEX	ADEC	-		MNEMONIC		TITLE	DATE
PAGE ADR	LINE	INSTR	LABEL	OPERATION	INSTRUCTION OPERAND	COMMENTS	
8	2 0	70	8 AA LOC	CST		To RAM location	
	1	00		CST		TFirst and last address	
	2	00		1			
	3	OF					
	4	0F					
	5	00					
	6	00					
	7	00					
	8	0.0				Y	
	29	74	8 CLR RAM			P6 to RAM location	(STORE RAM)
	Α	OE				P1 Zero; Count	
	2 B	70	8 MOVE/CMP			P2 to RAM location	(CMP DATA)(MOVE R
	2 C	62	8 CUR DATA			P6 from RAM location	(RD MASTER)(DATA
	D	OE				P1 ; Count	TTY
	2 E	70	8 Zero			P6 to RAM location	(SET ZERO)
	F	0E				P1 Non-Prog State; Count	J
	30	6A	8 CUR-END			P2 End address MSD	T (ADR CHK)
	1	60				P6 Current address MSD	
	2	OE				P1 ; Count	
	33	7E	8 CUR-LAST			P2 Last address MSD	
	34	60	8 CUR ADR			P6 Current address MSD	(RD MASTER)
	5	OE				P1 ; Count	TTY
	36	61	8 COUNT			P6 Current address LSD	
	7	OE				P1 ; Count	J V (BB) AA)
	38	CC	8 RD - AA	<u> </u>	0011 0011	P2 AA Display mask	(RD - AA)
	3 9	68	8 RD TTY-AA			P6 Start Address MSD	RDTTY
	A	1C			1000 C	P1 1 ; TTY Count	J 7 {RD-AD}
	3 B	00	8 RD-AD	 	0011 0000	P4 A Display mask	{un-un}
	С	08		 	0001 0000	P5 Position 4	
	D	CC		V	0011 0011	P2 AD mask rotated	
	E F	.80		CST CST	0001 XXXX	P6 To RAM location P1 8;	

	XADEL	AL .		MNEMONIC		TITLE	DATE
PAGE ADR	LINE	INSTR	LABEL	OPERATION	NSTRUCTION OPERAND	COMMENTS	DATE
8	40	CC	8 RD CHNG	CST	0011 0011	P2 AD mask	STR CHNG
1	1	60	[P6 Current address	<i>Y</i>
	2	10			1000 xxxx	P1 1 ;	
1	4 3	CC	8 DISP-AD		0011 0011	P2 AD mask	(DISP AD)
	44	60	8 TTY-AD/CHNG			P6 Current address	RD TTY; STR CHNG
,	5	06	N. Marine			P1 ; Count	<u> </u>
7	4 6	CC	8 1st-LAST		0011 0011	P2 AA mask	(DISPLAY)
	7	70				P6 To RAM location	
7	8	OC				P1 ; Count	
7	49	68	8 MV 1st-LAST			P2 To RAM location	(MOV RAM)
1	Α	7c				P6 From RAM location	1st-LAST to ST-EN
	В	OC				P1 ; Count	
	4 C	60	8 ADR ROM			P6 From RAM location	(FIN ADR)
	D	AE	1			P1 To port; Count	
	4 E	62	8 RD COPY			P6 To RAM location	(RD COPY)
	F	EE	1			P1 From port; Count	
	5 0	62	8 RD MAST			P6 To RAM location	(RD MASTER)
	1	9E	1			P1 From port; Count	Name and the second
	52	60	8 MV-ST-CUR			P2 To RAM location	(MV ST CUR)
	3	68		V		P6 From RAM location	•
	4	OE	1	CST	And the second s	P1 ; Count	
	5 5	co	(SKP/RTRY)	BBL	0	CO = SKIP: CI = RETRY	
	6						
	57	62	8 RESTORE	CST		P2 To RAM location	(RESTORE)
	8	70		CST		P6 From RAM location	
	9	OE	real transfer of the second	CST	And the state of t	P1 ; Count	
4.1	5A	62	8 BNPF	CST	· · · · · · · · · · · · · · · · · · ·	PG CURRENT DATA	BNPF TAPE
	В	<u>C8</u>	1	CST		PS BYTE COUNT; BIT COUNT	
	С			1			
	D		1				
	E			1			
	F		<i>,</i>				

PROGRAM ASSEMBLY FORM

	XADEC	۸L		MNEMONIC	C	TITLE DATE
PAGE ADR	LINE ADR	INSTR	LABEL	OPERATION	NSTRUCTION OPERAND	COMMENTS
8	60	52	EPROGRAME	JMS		T Check for ZERO state
	1	11			L'SET ZERO]	
· .	2	52	and the second s	JMS		
	3	ZE		1	[EMPDATA]	
	4	16		JCN	AI	
	5	8E			LAST CHK	
	6	22		FIM	PI	+ Send data to COPY
	7	FE			PORT, #	
	8	20		FIM	P6	
	9	62			CUR DAT LOC	
	6A	20	DO-ALL	SRC	P6	
, incipai	В	E9		RDM		
	С	23		SRC	PI	
	D	F2		WRK		
	E	62		1100	2	
	F	6 D		INC	D = 0	
	70	73		152	3	
	1	6A			DO ALL	IV
	2	52		JMS		T Sove CUR date for check
	3	6F			[SAV CUR DATA]	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	4	28		FIM	P4	
	5	00			ZERO	
	6	ZA		FIM	P5	E0= 32
	77	Eo		1	MAX TRY	80 = 128
		24	NEXTTRY	FIM	P2	T Pulse COPY and
	9	FF			ONETRY	
	Α	58		JMS		
	В	AZ			[PULSE]	IV
	С	52		JMS		T Read & chack
	D	1E			[RD COPY]	
	E	14	and the second s	JCN.	AO	
	F	93			TRY AGAIN	TV

		AL		MNEMONIC		TITLE DATE
PAGE ADR	LINE	INSTR	LABEL	OPERATION	NSTRUCTION OPERAND	COMMENTS
8	80	A8		LD	8	T Set good measure aunt
	1	F4		CMA		
	2	BB		Xell	8	
	3	49		LD	q	
	4	F4		CI!A		
	5	<i>B9</i>		XCH	9	
	86	24	GOOD MEAS	FIM	P2	T Pulse Copy for overchange
	7	FC			NTIMES	F8=8 1, FC=4
	8	58		JMS		•
	9	A2		Walter Land	LPULSE!	
	Α	79		152	9	T
	В	86			GOOD MEAS	
	С	78		15Z	8	
	D	86			GOOD MEAS	I V
	8E	52	LASTCHK	JMS		T See if COPY is slill good
	F	1E			[RD COPY]	
	90	14		JCN	AO	
	1	9A			PROG ERR	$ \Psi $
	9.2	CI	88841	BBL	1	
	93	79	TRY AGAIN	152	9	T Count the good measure court
	4	96		1	PLUS 1	
	5	68	17.	INC	8	
	96	7B	PLUS 1	152	B	T Try 1 times
	7	78)	NEXT TRY	
	8	7A		152	A TIN	
	9 9 A	78	2001 = no	F 1.1		T hisert on "E"
	7 A В	28 EC	PROGERR	FIM	P4	Theret on F"
	С	DE		LDM	0011 0111 E	
	D	4/			Far-	
	E	67		JUN	(DISP)	V
	F	0/			(VISI)	

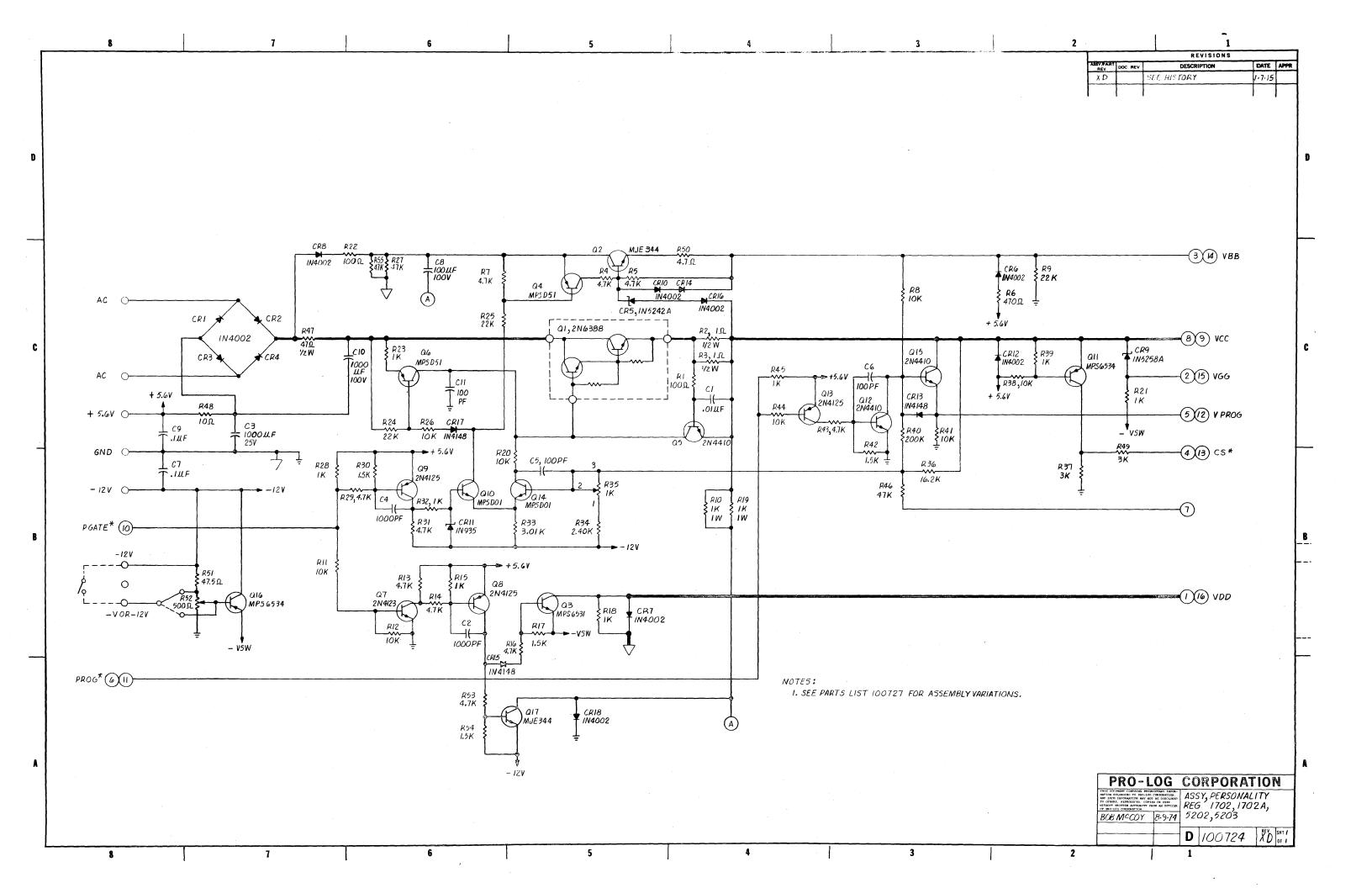
_			_	-	_	_			_			_	
	п	$\boldsymbol{\wedge}$	8.	_	~	\sim) D/	٦г	• А	_		. ,
Г	п	U-	L.	u	L3		96	121	JO	\sim		101	v

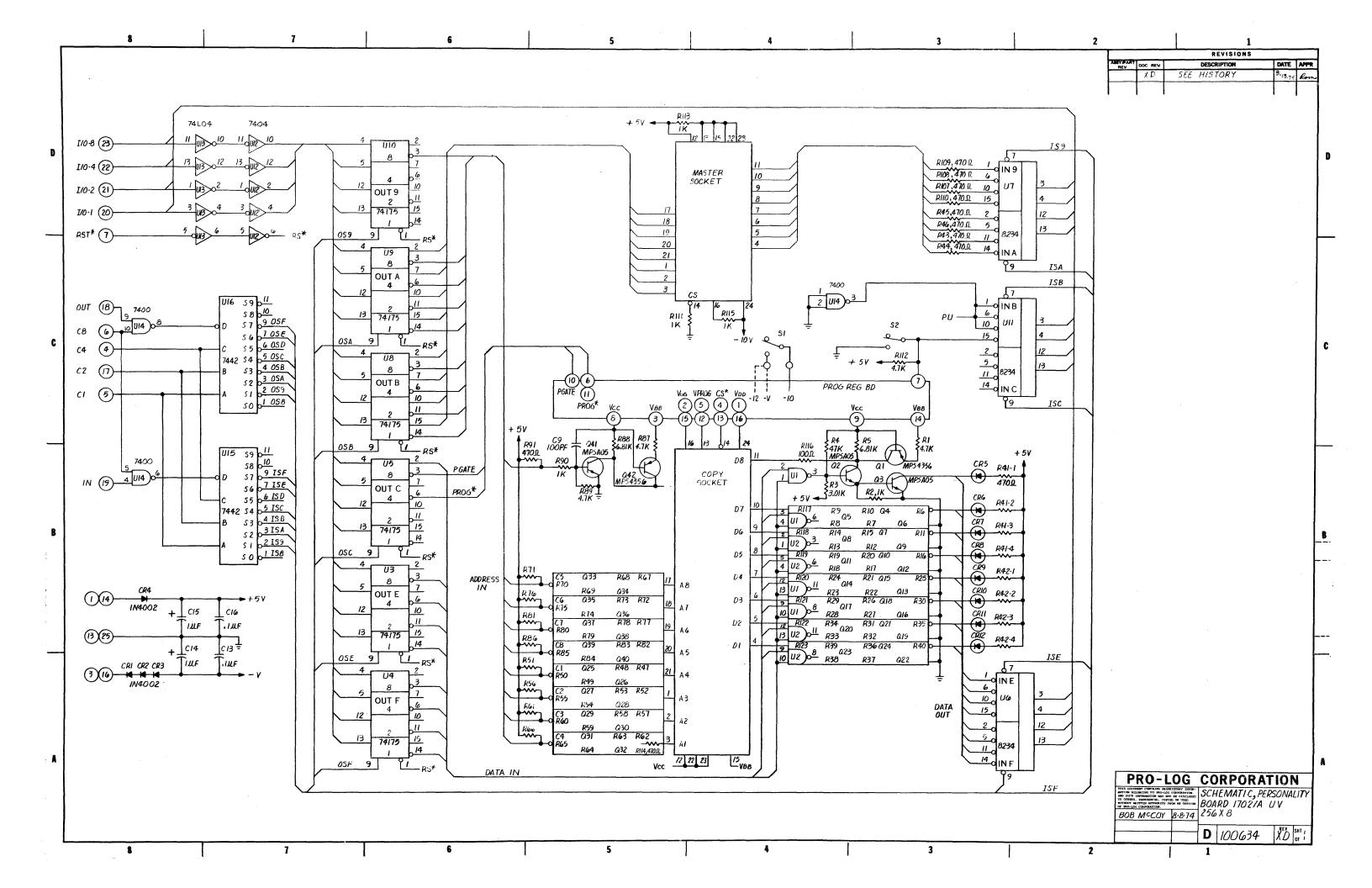
PROGRAM ASSEMBLY FORM

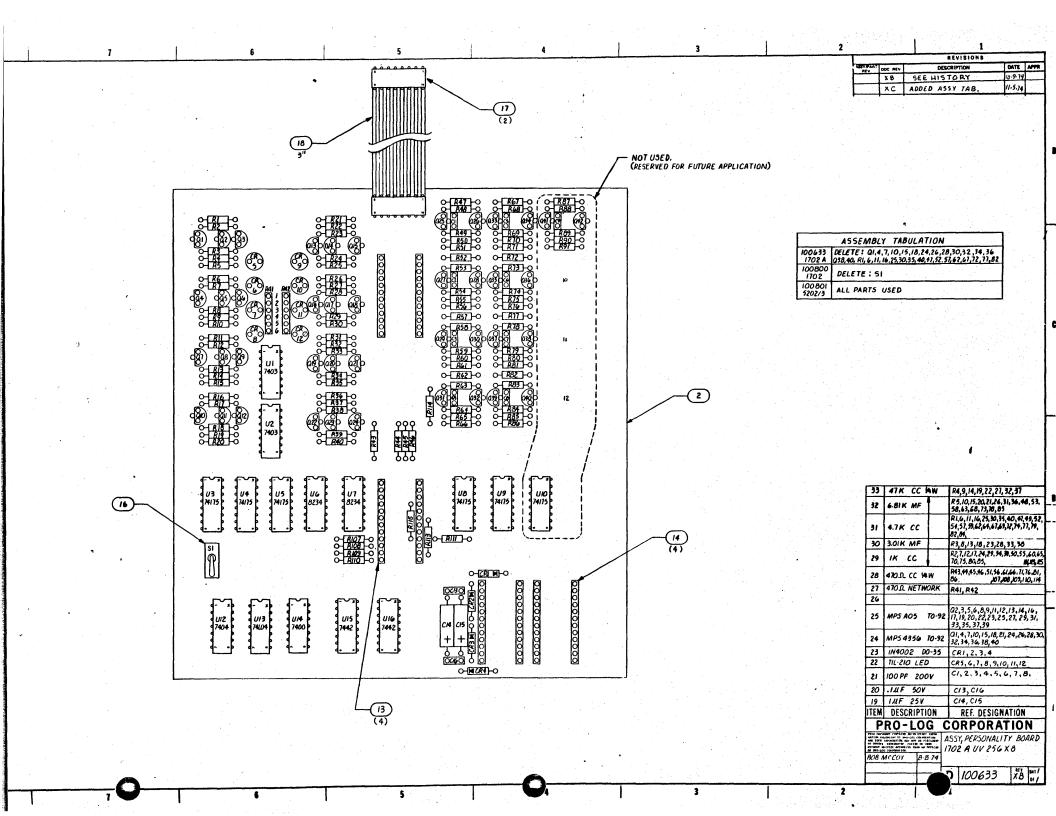
HE:	XADECIN			MNEMONIC		TITLE DATE
PAGE	LINE	INSTR	LABEL		NSTRUCTION OPERAND	COMMENTS
8	AO			OFENATION	O) EITAND	
	1					
	A 2	58	[PULSE]	JMS		T address complemented
	3	19	Bases L. S. Terrand	1 0 11 2	(FIN ADR)	age as comprismed
	4	52		JUS		
	5	60		1 7 77 3	(ADRCOMPL)	
	6	20		FIM	PO	T P goto ON
	7	0			PORT C	1 7 7 07
	8	21		SRC	PO	
	9	D8		LDM	8	
	Α	EZ		WAR		1
	В	58		JMS		T address normal
	С	19			(FIN ADR)	
	D	52		JMS		
	E	62			(ADR ROM)	V
	F	20		FIM	Po	T Pulse ON
	Bo	CO			PORT C	
	1	21		SRC	PO	
	2	DC	· ·	LOM	۷.	
	3	E2		WRR		
	4	20		FIM	PO	T Pulse width E4 = 4./MS
	<i>B</i> 5	58			WIDTH	Thuse width $E4 = 4.1 \text{ MS}$ $58 = 3.0 \text{ MS}$
	6	51		JMS		
	7	52			(SHORT D)	V
	8	D8		LDM	8	T Pulse OFF
\	9	E2		WRR		V
5	Α	DO		LOM	0	T Parle OFF
5	В	EZ		WRR		V '
J	C	20		FIM	Po	T Duty cycle delay
٥	D	80			FINE	86.7
N	E	22		FIM	Pl	DFS 17.5 Millisec
Ø	F	.DF			COARSE	

PROGRAM ASSEMBLY FORM

HE	XADECIM	1AL		MNEMONIC		1	DATE
PAGE ADR	LINE ADR	INSTR	LABEL	IN	STRUCTION OPERAND	TITLE	
8 ADA	CO	51			OPERAND		COMMENTS
-		5/		JMS		- .	
	1	59			(VAR A)	V	
	2	75		152	5	IT_	Court burst
	3	A2			[PULSE]		
	4	74		152	4		
	5	42			[PULSE]	<u>V</u>	
	6	00		BBL	0		
	7						
	8						
	9						
	Α						
	В						
	С				·		
	D					1	
	E					1	
	F					+	
	Do						
	1						
	2						
	3					-	
	4=						
	5					- 	
	6						
	7					-	
						+	
	8				<u> </u>		
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0	A		- 1			-	
0	В						
7	С						
9	D						
3	E						
8	F						100001 8/74

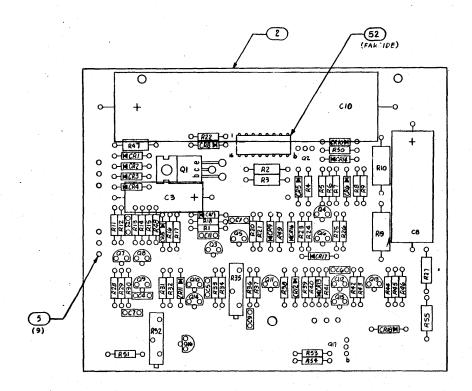






T		REVISIONS	REVISIONS						
ABY PARY	DOC MEY	DESCRIPTION	DATE	APPR					
XD		SEE HISTORY	1.7.75						
				T-					

48 47.5 L MF YAW R51



FOR 1702 A FOR 1702,5202,5203 7

	P	47.736 MIL 1414	15.27
	47	IOSL CC YAW	R48
.	46	47 fL CC 1/2W	R47
	45	3K CC YAW	R37,49
	44	IK CC IW	RIO, 19
	43	470 IL CC VAW	R6
	42	4.71 CC 4W	R50
	41	IK POT.	R 35
	40	200K CC VAN	R40
	39	47K CC	R46,R27,R55
	38	22K CC	R9,R24,R25
	37	16.2K MF	R36
1	36	IOK CC	R8,11,12,20,26,38,41,44
	35	4.7K CC	R4,5,7,13,14,16,29,31,43,53
-	34	3.01 K MF	R33
	33	2.40K MF	R34
	32	IK CC	R18,21,23,28,32,39,45,15
	31.	I.SK MF	R17, 30,42,54
	30	100 SL CC 1/4W	RJ. 22
ı	29	IT CC 1/2 W	R2,3
	28	500 A POT.	R52
	27	1000UF 25V	73
	26	100 LF 140V	C8
- 1	25	1000PF 200 V	C2,C4
	24	100 PF 200V	C5,C6,C11
-	23	OILF TOOV	CI
-	22	.IMF SOY	C7,C9
	21	1000 UF 100V	CIO
-	20	IN5258A DO-7	CR9
ı	19	IN5242 A	CR5
1	18	IN935	CRII
ı	17		
	16	IN4002 DO-41	CR1.2,3,4,6,7,8,10,12,14,16,18
	15	IN4148 DO-35	CR13,15,17
	14	MPS DOI	010,014
-	13	MJE 344	Q2.Q17
	12	MP56534 TO-92	
	11	MP5 D 51 TO-92	04,06
	10	2N6388	01
-	9	MP5 6531	03
. إ	8	2N4410 TO-92	05,012,015
	7	2N4125 TO-92	QA, Q9, 313
	6	2N4123 TO-92	a7
	ITEM	DESCRIPTION	REF. DESIGNATION
	P	RO-LOG C	ORPORATION
.	-		
			155Y, PERSONALITY REC 102A
	BOB	MCCOY 8874	,067

BOB MCCOY 8-8-74

D 100.727

REV DATE APPR **BESCRIPTION** SEE 3.13.75 XD HISTORY Rom

100633 1702A **ASSY** 100 800 1702 ASSY 5202/3 100801 ASSY

PRO-LOG

AND SUCH INFORMATION MAY NOT BE DISCLOSED

BOB MACCOY 8.8.74 CORPORATION

ASSY, PERSONALITY BOARD 1702A UV 256X8

100633

REV SHT / XD 0F 3

				QUA	YTITN	REQ'	D
			PARTS LIST	ASSY NO. 100633	NY NO.	1.5	1
ITEM NO.	PRO-LOG NUMBER	VENDOR PART NO. OR SPEC. NO.	DESCRIPTION	ASS 100	ASSY 1003	ASS 102	ASSY
	100633		ASSY, PERSONALITY BD 1702A UV 256X8	REF			
2	100632		PWB, PERSONALITY BD 1702A UV 256X8	1	l	1	
3	100634		SCHEMATIC, PERSONALITY BD 170ZA UV 256X8	REF	REF	REF	
4	100800		ASSY, DERSONALITY, 1702 UV 256 X 8		LEF		
5	190801		ASSY, PERSONALITY, 5202/3 LIV 256 XB			REF	
6		7400	IC, TTL GATE POS NAND QUAD ZINPUT	1	1	1	
7		7403	IC, TTL GATE POS NAND QUAD 2 INPUT OC	2	2	2	
8		7404	IC, TTL GATE INVERTER HEX	1	L	1	
9		74104	IC, TTL-L GATE INVERTER HEX	1	1	1	
10		7442	IC, TTL DECODER DCD TO DEC. 10F10 ACT/LO OUT	2	2	2	
11		74175	10, TTL QUAD DTYPE FF W/DIRECT CLEAR	5	5	5	
12		8234	IC, TTL MULTIPLEXER QUAD 2 INPUT OC	2	2	2	
13		2300-12BC5X	SOCKET IC 12 PIN W/WAP 2 LEVEL	4	4	4	
14		C5A-3200-12.B	SOCKET, IC 12 PIN SIP P.C. SOLDER LOPPRO	4	4	4	
15		TEX 224-331M	SOCKET, IC 24 PIN DID PCSOLDER ZIP DID	2	2	2	
16		JBT MPC-121	SWITCH, TOGGLE	/	******	1	
17		3416-0000	CONNECTOR, 3M 16 PIN	2	2	2	-
18			CABLE, RIBBON - 16 LEAD, FLAT	う"	3"	3"	
19		25 TAL 1.0	CAPACITOR ALUM 25V INF	2	2	2	
20		AVX CK05 BX 104K	CAPACITOR CER 50V ./wx	2	Z	2	
21		AVX CKOS BX 101K		ප	8	8	
FRO	-log Rpor	ATION ASSY, PER	SONALITY BD 1702 UV 256X8 PL 100633	X.D	SH	2 0)F 3

				QUA	NTITÝ	REQ'	D
			PARTS LIST	Y NO.	ASSY NO. 100800	Y NO. 901	Y NO.
ITEM NO.	PRO-LOG NUMBER	VENDOR PART NO. OR SPEC. NO.	DESCRIPTION	ASSY	ASS 100	ASS3 100	ASSY
22		TIL-210	LED	ව	8	8	
23		1N4002	DIODE, RECT IA 100V DO-41	4	4	4	
24		MPS 4356	TRANSISTOR, PNP IA 80V GP TO-92		16	16	
25		MPS A05	TRANSISTOR, NPN LOOMA GOV GP TO-92	24	24	24	
24			RESISTOR, CARB, COMP 1/4W 10% 100-R	80			
27	100165	PRO-106 100164	RESISTOR NETWORKS, SR YOW GPINISIP. 100C 4705	21	2	2	
28			RESISTOR, CARB, COMP. YAW 10% 470.R	17	17	17	
29			RESISTOR, CARB, COMP, 1/4 W 10% IK	19	19	19	
30			RESISTOR, METAL FILM YAW 1% 3.01K	B	8	8	
31			RESISTOR, CARB. COMP. 1/4 W 10% 4.7K	8.	24	24	_
32			RESISTOR, METAL FILM 4W 1% 6.81K	16	16	16	
33			RESISTOR, CARB, COMP, 1/4W 10% 47K	8	8	8	
34							
35						,	
36							
37				1			
38							•
39							1
40							
41		,					
42					-		
PRO	LOG RPOF	RATION ASSY, PERSO	NALITY BD 1702A V 256 X8 PL 100633	XD	SHI	3 0)F3

TEV	*	DESCRIPTION	DATE	APPR
XD	SEE	HISTORY	1.7.75	
0				
			•	
				•
	•			
0				
• .•	100727	PERSONALITY REG FOR 1702 A		
	100728	PERSONALITY REG FOR 1702, 5202, 5203		
	100	727100711.27		

				QUA	NTIT	EQ'	D i
			PARTS LIST	Y NO.		Y NO.	Y NO.
ITEM NO.	PRO-LOG NUMBER	VENDOR PART NO. OR SPEC. NO.	DESCRIPTION	ASS 100	ASSY /007	ASS	ASSY
	100727		ASSY, PERFONALITY REG 1702A	REF			
2	100726		PWB, PERSONALITY REG 1702,17024, 5702,5003	1	1		
3	100724		SCHEMATIC, PERSONALITY REG 1702,1702A,5702,5203	REF	REF		
4	100728		ASSY, PERSONALITY REG 1702,5202,5203		REF		
5		AMP 9-350362-1	CONNECTOR PIN	9	9		
6		2N4123	TRANSISTOK, NPN 200MA 30V GP TO-92	ı	1		
7		2N4125	, PNP 200 MA 30VGP TO-92	3	3		
රි		2N4410	, NPN TO-9'2	3	3		
9		MP56531	, NPN	1	1		
10		2N6388	, NPN	- 1	1		
		MIPS D51	, PNP 1A 80V GP TO-92	2	2		
12		MP56587	TRANSISTOR, PNP 600MA 40V GP TO-92	2	2		
13		MJE 344	TRANSISTOR NPN	2	2		
14		MP5 DOI	TRANSISTOR NIN	2	2		
15		1/14148	DIODE, 10MA 75V SIG DO-35	3	3		
16		114002	, RECT 1A 100V DO-41	12	12		
1.7							·
18		IN935	ZENER	1	1		
19		IN 5242A	ZENER 12V	1	1		
20		IN 5258A	DIODE, ZENER 364 DO-7	1	1		
21			CAPACITOR, ALUM 100V 1000-UF	1	1		
PRO-LOG CORPORATION ASSY, PERSONALITY REG 1702A PL/00727				XD	SHT	2 (of 4
Form 100088							

			•	QUA	PLITM	REQ	'D
			PARTS LIST	ASSY NO.	37 NO.	Y NO.	NO.
ITEM NO.	PRO-LOG NUMBER	VENDOR PART NO. OR SPEC. NO.	DESCRIPTION	ASS 100	ASSY 1007	ASS	ASSY
22		AVXCKOS BX 104K	CAPACITOR, CER 50V10% . LUF	3	3		
23		AVXCKOSBX 103K	CAPACITOR, CER 100V 10% .OLLE	1	1		
24		AVXCKOSBX 101K	CAPACITOR, CER 200V 10% 100 PF	3	3		
25		AVXCKOSBX 102K	CAPACITOR, CER 200V 10% 1000 PF	2	2		
26		GE 13F9829AA9	CAPACITOR, ALUM 140V: 100LLF	73	2.		
27			CAPACITOR, ALUM 25V 1000 UF	1	1		
2.8			RESISTOR, POT, 15T 10% CERMET 500-R	1			
29			CARB COMP 12W 10% ISL	1	2		
30			CHRB COMP VIN 10% 1001	2	2		
31			METAL FILM YOU 10% 1.5K	4	4		
32			CARR COMP 14W 10% 1K	8	8		
33			METAL FILM YAW 19'5 2.40K	١	-		
34			METAL FILM YAW 1% 3.01K	2	Gran.		
3<			CARB COMP YAW 10% 4.7K	10	10		
36			CARB COMP YAW 10% TOK	8	8		
37	•		METAL FILM 1/4W 10% 16.2K	and the last	-		
38			CARB COMP YAW 10% 22K	3	3		٠
_34			CARB COMP VAW 10% 47 K	3	3		
40			RESISTOR, CARB COMP YAW 10% 200K		1		
41			RESISTOR, POT. 15T 10% CERMET IK	1	1		
42			RESISTOR, CHEBONCOMP 1/4W 10% 4.7.SL		1		
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